

AMENDMENT TO THE CLAIMS

1. (currently amended) An electrically programmable memory element, comprising:

a programmable resistance material;

a threshold switching material comprising a chalcogen element; and

a first layer of a dielectric material between said programmable resistance material and said threshold switching material.

2. (original) The memory element of claim 1, further comprising a second layer of a dielectric material, said threshold switching material being between said first layer of said dielectric material and said second layer of said dielectric material.

3. (original) The memory element of claim 2, further comprising a third layer of a dielectric material, said programmable resistance material being between said third layer of said dielectric material and said first layer of said dielectric material.

4. (original) The memory element of claim 1, further comprising a second layer of a dielectric material, said programmable resistance material being between said first layer of said dielectric material and said second layer of said dielectric material.

5. (original) The memory element of claim 1, wherein said programmable resistance material is a phase-change material.

6. (original) The memory element of claim 1, wherein said programmable resistance material comprises a chalcogen element.

Claim 7 (canceled)

8. (original) The memory element of claim 1, wherein said first layer of said dielectric material has a thickness of less than 100 Angstroms.

9. (original) The memory element of claim 1, wherein said dielectric material comprises a material selected from the group consisting of oxide and nitride.

10. (original) The memory element of claim 1, wherein said dielectric material is silicon nitride.

11. (currently amended) An electrically programmable resistance memory element, comprising:

 a programmable resistance material;
 a dielectric material formed over said programmable resistance material; and
 a threshold switching material formed over said dielectric material, said threshold switching material comprising a chalcogen element.

12. (original) The memory element of claim 11, wherein programmable resistance material comprises a chalcogen element.

Claim 13 (canceled)

14. (original) The memory element of claim 11, wherein said dielectric material comprises an oxide or a nitride.

15. (original) The memory element of claim 11, wherein said threshold switching material has an S-type current-voltage characteristic.

16. (currently amended) An electrically programmable resistance memory element, comprising:

a threshold switching material comprising a chalcogen element;

a dielectric material formed over said threshold switching material; and

a programmable resistance material formed over said dielectric material.

17. (original) The memory element of claim 16, wherein programmable resistance material comprises a chalcogen element.

Claim 18 (canceled)

19. (original) The memory element of claim 16, wherein said dielectric material comprises an oxide or a nitride.

20. (original) The memory element of claim 16, wherein said threshold switching material has an S-type current-voltage characteristic.